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SOVIET TELEVISION AND RADIO COMMUNICATIONS IN FIFTH FIVE-YEAR PLAN

Z. Topuria,
Deputy Min of Communications USSR, Stalin Prize Winner

Television

The year 1952 has been marked by the rapid growth of the television receiving network. Large numbers of receivers have been obtained by the residents of cities where television centers are operating and also by the people in towns surrounding these cities.

The following new television receiver types have been developed: the 26-tube T2-A with a screen diameter of 310 mm, the cheaper 17-tube "Sever" with a screen diameter of 230 mm, and the T-4 receiver with a 381- x 508-mm screen. Construction of television centers is well advanced in many cities and these will shortly go into operation. Soviet industry has developed standard visual and aural transmitters and standard studio equipment for television centers as well as excellent mobile television stations.

With the extensively developed television receiving network in cities, the crowding of individual antennas close together greatly affects reception and the clusters of antennas on the roofs of buildings are unsightly. Collective antennas can be used to eliminate these difficulties. Testing of a collective antenna developed by the Scientific Research Institute, Ministry of Communications, revealed that it can ensure television reception for 100 subscribers if the field intensity is sufficient.

Another possible solution is the construction of apartment-type wired television centers. Different types of wired television centers have been developed by industry and in the Scientific Research Institute, Ministry of

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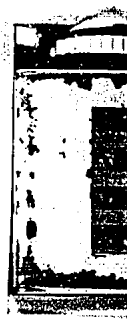

Communications. Experiments showed that the wired television center can provide better picture quality than an individual receiver. An experimental wired television center to supply 50 subscribers will be installed in a Moscow apartment house in 1953.

The Ministry of Communications is conducting experimental work on the transmission of television programs over interurban coaxial cable. The transmission of television programs in this manner and also by radio relay lines will make possible the exchange of programs between the television centers of cities.

One of the scientific research institutes has completed the development of a color-television installation with sequential transmission of colors. Trichromatic receiving tubes are being developed; these will eliminate the need for a rotating disk in the receiver.

Radio Communications

The importance of short-wave communications for the Soviet economy is tremendous, because wire communications with points which are thousands of kilometers from the center of the country are very inefficient. In 1952, work continued on increasing the stability of short-wave communications lines. The introduction of radio relays permitted a considerable increase in the length of these lines and also increased their stability. Original equipment was developed for relay operation using the two-channel frequency telegraphy system. The operation of this equipment is based on the so-called integral principle of reception; this permits reconstruction of the form of telegraph signals which have suffered considerable distortion in relaying.

The frequency-shift keying method has been further improved and its use has been extended to intraoblast radio channels. The introduction of frequency-shift keying and radio relays has made radio communication more reliable than wire communication over certain routes.

The main problem for the immediate future is the further increase in the length and stability of operation of radiotelegraph, radiotelephone, and facsimile trunk lines. We must also remember the importance of the role of official /departmental/ radio communications as a means for operational guidance of the economy. The postwar years have been characterized by the exceedingly rapid growth of this type of communications, particularly with moving objects.

Service radio communications networks have also grown rapidly in the postwar period. This growth indicates that there is a great need in the economy for radio stations of the dispatcher type with a small effective radius. To meet this need, our scientists and production workers are confronted with the problem of developing radio stations which are economical to supply, and inexpensive, simple, and reliable. They should require a narrow band of frequencies in uncrowded portions of the frequency spectrum for their operation.

In its directives on the Fifth Five-Year Plan, the 19th Party Congress pointed out the need for more extensive work on the introduction of radio-relay communications. The development of this type of communications will mark a genuine revolution in the field of interurban communications, which is so important for the USSR with its vast territory. The introduction of radio-relay communications will permit the establishment of multichannel telephone

lines, which are just as reliable as cable lines between the cities of the USSR, with a minimum expenditure of nonferrous metals. It will also permit the further development of subscriber telegraphy. All this will facilitate considerably the operational guidance of the economy. The radio-relay lines will also be used for exchange of radio broadcasts and television programs between cities.

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